June 2023

Installation and Operation Manual

Blackmagicdesign

ATEM Television Studio Switchers

ATEM Television Studio HD8
ATEM Television Studio HD8 ISO

Welcome

Thank you for purchasing an ATEM Television Studio HD8 switcher for your live production work!

If you're new to live production switchers, then you're about to become involved in the most exciting part of the television industry and that's live production! There is nothing like live production and it's so easy to become addicted to the adrenaline rush of editing in real time while the live event unfolds before your eyes. It's real television the way it should be!

Previously, broadcast quality live production has always been way too high in cost for most people to afford, while affordable switchers lacked broadcast features and quality. ATEM Television Studio HD8 switchers change this letting you create the most amazing professional live production results. We hope you get years of use from your switcher and have lots of fun creating live production!

This instruction manual should contain all the information you'll need for installing your ATEM Television Studio switcher.

Please check the support page on our web site at www.blackmagicdesign.com for the latest version of software for your ATEM switcher. Simply connect your computer to the ATEM switcher and the ATEM hardware control panel via USB to update software so you get all the latest features! When downloading software, please register with your information so we can keep you updated when new software is released. We are constantly working on new features and improvements, so we would love to hear from you!

Grant Petty
CEO Blackmagic Design

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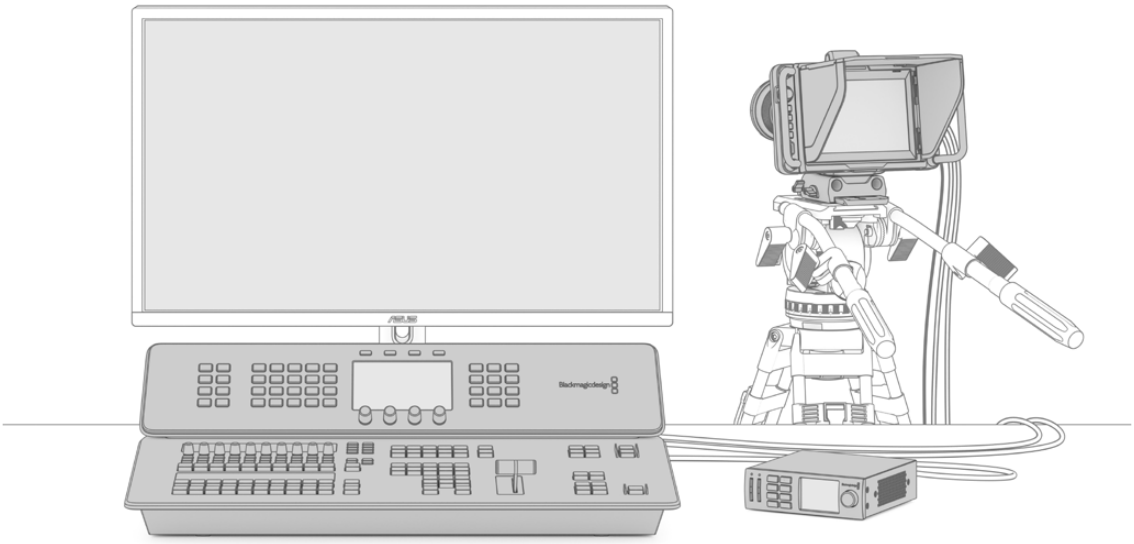
Introducing ATEM Television Studio HD8

ATEM Television Studio HD8 switchers are professional broadcast grade digital production switchers capable of switching and processing a variety of video sources in live video production and broadcast environments. The switcher uses the current and familiar Mix Effects based design with software and hardware control options that provides an intuitive, fast and easy to use workflow for program/preview switching. If you're used to the older A/B direct switcher style, ATEM switchers also support A/B direct switching which makes it easy to get started.

You only need your ATEM switcher to get started as it has a built in control panel so you can switch your live production using just the switcher. However, if you want to add more control flexibility, you can also use ATEM Software Control, or even add one or more hardware control panels if you need a more advanced solution.



Setting up your ATEM Television Studio HD8 can be as simple as plugging the multiview output into a monitor, plugging in a camera and then connecting the program output to a recording deck

What is an M/E Switcher?

If you have used low cost switchers before, then these might not have used the mix effects style of operation that's commonly called an M/E style of operation. If you have used an M/E style switcher, then you might want to skip ahead to install and get working with your new ATEM switcher.

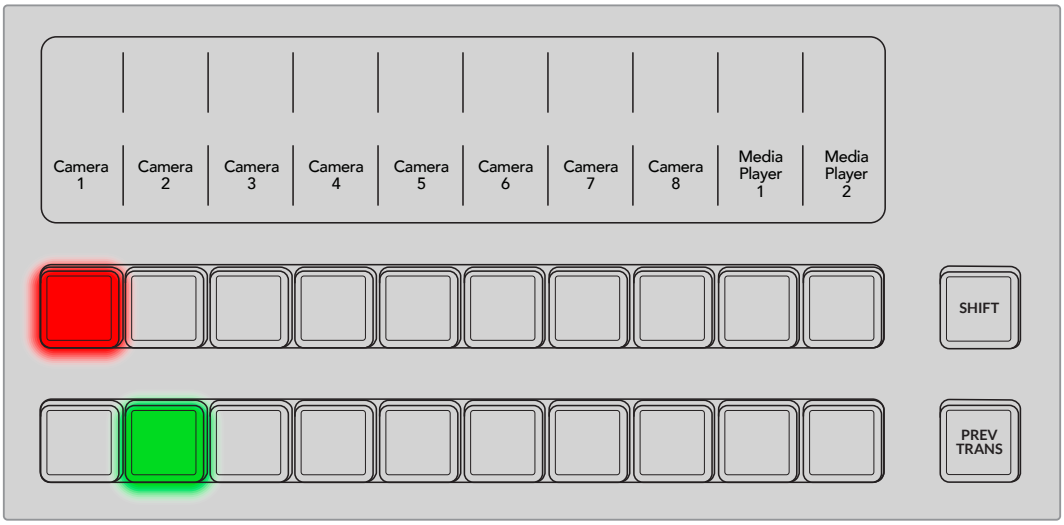
When you're starting out with a switcher for the first time, the ATEM can look a little intimidating with all its buttons and knobs, however it's all very logically laid out so it's very simple to use.

ATEM is a true high-end broadcast switcher that operates using the M/E workflow standards used in the broadcast industry. This means once you get familiar with how it works, you will feel instantly at home on virtually any switcher used in broadcast today.

The M/E style of operation has been developed over decades to help eliminate errors when switching live events and is a broadcast standard. It's extremely easy to see what's going on at any time so you don't get confused and make mistakes. The M/E style of operation lets you check the sources you are about to switch on air, as well as try effects before using them on air. You can see buttons for each keyer and transition, so you instantly know what's going on and what's about to happen.

The best way to learn about how your ATEM works is to grab your switcher and play with it while referencing this manual. You might want to jump ahead and install your switcher before reading the rest of this section.

To start, the most visible part of an M/E based control panel is the transition fader, which typically appears as a T bar or slider on a control panel, and the program and preview rows of source buttons.



The program and preview rows of buttons let you preview a source and then switch it to air

There are multiple types of transitions available, and they can be selected using the system control buttons to the left of the LCD or by pressing the specific transition button on the panel. You can choose from a wide range of wipe patterns and DVE effects, plus use the LCD menu to adjust the transition rate and other transition settings.

The other concept that is important to know about M/E style switchers, including ATEM, is the video on the program and preview rows is technically called the background video. This is because the upstream (effects) keyers and downstream keyers will overlay on top of this source. So you can load graphics into the keyers and see them with the preview video and when keys are turned on, you will see the overlay on top of the program video. This is very powerful and allows multiple layers to be built up.

Another great advantage of the ATEM M/E style of operation is you can tie keyers to the transition. This means when you do a mix transition, you can also fade on or off keyers at the same time. This allows you to build up a composition, and then bring the whole lot on air at the same time. This is what the next transition buttons do, and you can select background for normal transitions, or select one or more keyers to transition them on air.

You can even press multiple buttons on an ATEM Television Studio HD8 switcher's control panel to tie multiple keys and the background at the same time. There are also dedicated downstream key tie buttons to tie downstream keyers to the transition. Downstream keys also have dedicated cut and mix buttons and so are very flexible. Downstream keyers are always layered over the top of everything including the transition, so are a great place to key bugs and logos.

Finally, when your live production is finishing, it's nice to have a dedicated fade to black (FTB) control to fade everything to black. You can see the dedicated fade to black control on the bottom right of the switcher. This lets you fade everything to black, and helps make sure you don't miss a layer. Fade to black is at the extreme end of the processing chain so you get a clean fade of all sources.

The last part of an M/E style switcher is the select bus. This is above the program row, and simply allows sources to be selected for effects processing and other purposes, and there is a label above this to show what you're switching. The select bus is commonly used to select key inputs, and can also be used to run macros directly from the control panel.

As you can see by this quick overview, M/E style of operation allows confident live production with good feedback on what's going on and the state of your switcher and programming at any point in your production. Once you learn the M/E style of operation, you can move between models of production switchers with little retraining as they all work the same.

What is an A/B Direct Switcher?

If you have been using video switchers for a long time, then you might be used to older-style A/B direct switchers.

A/B direct switchers have an A bus and a B bus. One bus is the program bus which shows a red button for the current program output. The other is the preview bus which has a green button for the preview video. As you move the fader bar up and down, the buses switch so that the red program button follows the fader handle. This is where A/B direct switching is really easy to use as the buttons stay lit in the same positions and just switch color between green and red.

A/B direct switching becomes a little more confusing when the fader control is not used to make the switch. If you use a cut or auto transition button to bring your preview source on air, or if you use more than one control panel connected to your switcher, the fader control won't have moved on the control panel that you are using. The red program output always follows the fader control and, as you haven't moved it, the red program light has to move to another button on the same row and the green preview light has to move to another button in its row.

This can become quite confusing when sometimes using the fader control to make switches, and sometimes not, as the rows containing your preview and program buttons will sometimes switch and sometimes stay where they are which has the potential to lead to mistakes.

This is why modern M/E style switching is preferable because you'll always find your green preview button in the preview row, and the red program button in the program row. It's always consistent and there are no surprises with M/E style switching.

Understanding the ATEM Switcher

ATEM Television Studio switchers provide all the video processing, as well as all video input and output connectors.

The switcher has a built in control panel with buttons and knobs so you can switch directly from the switcher itself, or you can connect to a computer via Ethernet and use ATEM Software Control that emulates the same controls on a software panel. Using the software panel together with the built in control panel lets multiple operators switch your production. For example, you could switch cameras using the built in panel while other operators control the camera and audio levels using the software panel. The options are endless.

ATEM Television Studio HD8 switchers support HD video up to 1080p60 via 3G-SDI. All inputs on your switcher have a built in resynchronizer and standards converter so you can plug in different formats and they will automatically convert to the switcher's set output format.

Each switcher features advanced chroma keyers, a Fairlight audio mixer, camera control adjustments and the ability to load stills into the media pool and much more. When connected to a network, you can select streaming inputs or record directly to network storage.

ATEM Television Studio HD8

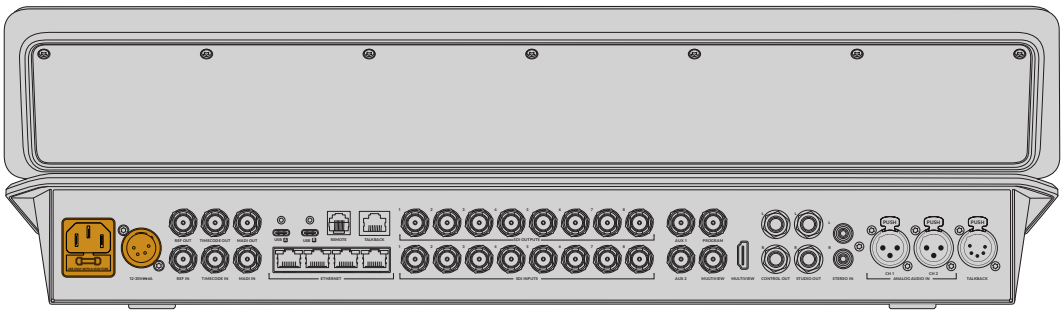
ATEM Television Studio HD8 ISO

Getting Started

Getting started with your ATEM Television Studio HD8 is as simple as connecting power, adding your SDI video sources, connecting your multiview and using the built in control panel to check your inputs.

Plugging in Power

To power your ATEM Television Studio HD8, plug a standard IEC cable to the power input on the rear panel. ATEM Television Studio HD8 model switchers also feature a DC input, which lets you connect power from an external 12V battery. Once powered the control panel LCDs will turn on and camera buttons will illuminate.



Connect power via the IEC or DC inputs on ATEM Television Studio HD8 and HD8 ISO

Connecting the Multiview

To check the inputs, connect a display to the multiview output using either the SDI or HDMI multiview connections.

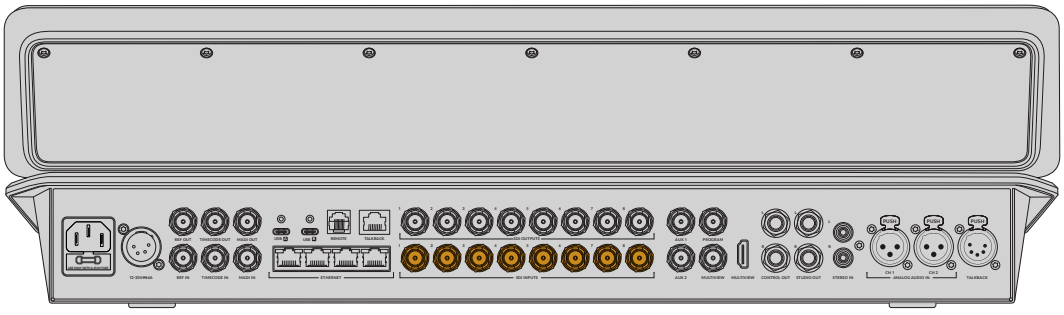
Once connected, you should see 8 small boxes and 2 large boxes on the display. Each box is a separate view and as you connect additional sources, they will appear on their respective views. You can customize the look of the multiview to show up to 16 views using ATEM Software Control. For more information, see ‘using the multiview’ later in this manual.

If you can see the multiview, then your ATEM is powered on and running fine and you can now start plugging in sources.

Connect your ATEM Television Studio HD8 to a monitor to view the multiview output

Plugging in Sources

Plug your SDI cameras and other HD sources into ATEM Television Studio HD8’s SDI inputs. These 3G-SDI connections feature format conversion and frame synchronizers so all sources will conform to the video format set on your switcher.



3G-SDI Television Studio HD8

With ATEM Television Studio HD8 ISO switchers, you can also connect streaming sources via the Ethernet ports, such as Blackmagic Studio Camera 6K Pro. For more information on selecting sources via Ethernet, refer to ‘additional features on ISO models’ later in this manual.

Plugging in Audio

ATEM Television Studio HD8 includes a built in audio mixer which allows the use of embedded SDI audio from your cameras as well as external audio from the XLR and RCA inputs as well as the MADI BNC inputs. These additional audio inputs can be used for other audio sources such as camera microphones and pre-recorded audio.

Audio inputs on ATEM Television Studio HD8

Once your audio is connected, you can confirm the signal on each channel by looking at the levels on the control panel's audio mixer.

Check audio levels via the meters on the Fairlight audio mixer

For more information refer to the audio mixer section later in this manual.

Performing a Transition

To start, the most visible part of an M/E based control panel is the transition fader, which typically appears as a T bar or slider on a control panel, and the program and preview rows of source buttons.